

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (CURRENTLY AMENDED) An apparatus to prepare a biocompatible matrix from a matrix-forming fluid comprising

a chamber to contain a matrix-forming fluid, said chamber defined by at least a top planar surface of a heat conductive material and a bottom planar surface of a heat conductive material, said top and bottom surfaces effective to symmetrically remove heat from said top surface and said bottom surface of said matrix-forming fluid in preparation of the biocompatible matrix,

at least one discontinuous gasket having a uniform thickness positioned between said top and bottom surfaces to define a perimeter of said chamber, said gasket capable of containing said matrix-forming fluid within said perimeter, and

a plurality of fasteners to fasten said apparatus.

2. (ORIGINAL) The apparatus of claim 1 further comprising a container sized to contain a coolant fluid for immersion of said apparatus in said coolant fluid.

3. (ORIGINAL) The apparatus of claim 2 wherein said container is open.

4. (ORIGINAL) The apparatus of claim 1 wherein said chamber is a bladder.

5. (ORIGINAL) The apparatus of claim 1 wherein said heat conductive material is a metal.

6-32. (WITHDRAWN)

33. (PREVIOUSLY PRESENTED) An apparatus for casting a biologically compatible matrix, said apparatus comprising a metal chamber forming an open chamber with five joined surfaces and a separate sixth surface attachable to said open chamber to form a closed chamber containing a matrix-forming fluid for a biologically compatible matrix,

spacers to space the first and second surfaces and thereby regulate a thickness of a matrix resulting from freezing of the matrix-forming fluid, and

fasteners to effect a liquid-tight seal among at least the five joined surfaces.

34-39. (WITHDRAWN)

40. (CURRENTLY AMENDED) An apparatus for controlled rate freezing of a matrix-forming fluid comprising a closed chamber defined by at least a top and bottom surface of a heat conductive material and a discontinuous gasket, said chamber containing said fluid, said heat conductive material symmetrically removing heat for controlled rate freezing of a matrix-forming fluid.

41. (ORIGINAL) The apparatus of claim 40 wherein the chamber is a bladder.

42. (CURRENTLY AMENDED) The apparatus of claim 40 wherein the ~~chamber~~
~~further comprises at least one~~ gasket is of substantially uniform thickness separating
said top and bottom surfaces.
43. (NEW) An apparatus to prepare a biocompatible matrix made by
containing a matrix forming fluid within a chamber having a perimeter defined
by a gasket, a top surface of a thermal conductive material in contact with the fluid,
and a bottom surface of a thermal conductive material in contact with the fluid,
cooling the fluid under conditions to produce a matrix having substantially
symmetric reticulations and uniform thickness,
dehydrating the matrix, and
physically crosslinking the matrix,
for use to prepare a biocompatible matrix capable of supporting cells inoculated
thereon.
44. (NEW) The apparatus of claim 43 for use to prepare a lamination layer of
cultured dermal cells for a layer of cultured epidermal cells applied thereon.
45. (NEW) An apparatus to prepare a biocompatible matrix made by
providing a collagen containing matrix forming fluid within a chamber having a
perimeter defined by a gasket, a top surface of a thermal conductive material in
contact with the fluid, and a bottom surface of a thermal conductive material in
contact with the fluid,

freezing the fluid under conditions to produce a solid uncrosslinked sheet having substantially symmetric reticulations and uniform thickness,
dehydrating the solid sheet to form a matrix, and
physically crosslinking the matrix,
for use to prepare a biocompatible matrix capable of supporting a lamination layer of cultured dermal cells for a layer of cultured epidermal cells applied thereon.

46. (NEW) An apparatus to prepare a biocompatible matrix having substantially symmetric reticulations made by

containing a matrix forming fluid within a chamber having a perimeter defined by a gasket, a top surface of a thermal conductive material in contact with the fluid, and a bottom surface of a thermal conductive material in contact with the fluid, and having a substantially uniform thickness,

cooling the fluid at a controlled rate to simultaneously remove heat from the top and bottom surfaces to produce a solid sheet matrix having substantially symmetric reticulations and uniform thickness,

dehydrating the solid sheet to form a matrix, and

physically crosslinking the matrix,

for use to prepare a biocompatible matrix capable of supporting cells inoculated thereon.